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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,767	06/21/2001	Whonchee Lee	108298515US2	9072

25096 7590 11/06/2002

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EXAMINER

GRANT, ALVIN J

ART UNIT

PAPER NUMBER

3723

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/887,767

Applicant(s)

LEE ET AL. *Ch*

Examiner

Alvin J Grant

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. '309 B1 in view of Datta et al. '300.

Referring to claims 1-7, 14-26, 31-59, 61-69 and 71, Miller et al. discloses processing a microelectronic substrate, comprising: removing portions of a conductive material having a first surface in a first plane with a recess extending transverse thereto, the recess is bounded by a second surface in a second plane; a conductive material having a corner between the first and second surfaces; the removal of at least a part of the conductive and nonconductive material from the corner after disposing an oxide layer on the conductive material; disposing a nitride layer on the oxide layer and removing at least a part of the nitride layer and part of the oxide layer and part of the oxide layer to expose the corner of the conductive material; exposing an oxidized portion of the conductive material to a chemical etchant. Miller does not disclose disposing an electrolytic fluid for removing part of the conductive material from the surface but Datta et al. does. Datta et al. discloses disposing an electrolytic fluid adjacent to the conductive material and removing at least part of the conductive material by positioning first and second electrodes in fluid communication with the electrolytic fluid and coupling at least one of the electrodes to a source of electrical potential because this process is especially useful for machining double-sided structures. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used electrolytic fluid to remove materials from the corners of the Miller et al. apparatus because of its usefulness in machining double-sided structures.

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Referring to claims 8-13, 27-30, 60 and 70, Miller et al. as modified above does not disclose an electrolytic solution consisting of water, hydrochloric acid and hydrofluoric acid in the proportion of 500:1:1; nor does it disclose the specific characteristics of the electrical power. The specific compositions of the electrolyte and electrical power are a matter of obvious engineering design choice to one having ordinary skill in the art at the time the invention was made since the applicant does not state any advantage the compositions have over the prior art, and it appears that the applicant's invention would function equally well with the electrolytic and electrical compositions disclosed by Miller et al. as modified. Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the chemical composition of the electrolytic solution of water, hydrochloric acid and hydrofluoric acid in the proportion of 500:1:1; and supplied electricity with the characteristics of 10 Volt, 15 Volts (RMS); 12 Volts A/C; frequency of 60 Hz. To the Miller et al. apparatus, since it has been held to be within the general skill of a worker in the art to select known materials on the basis of their suitability for the intended use as a matter of obvious design choice (In re Leshin, 125 USPQ 416), and since any known chemical inputs which are capable of removing the material from the substrate would be appropriate.

Response to Arguments

Applicant's arguments with respect to claims 1-71 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date

of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alvin J Grant whose telephone number is (703) 305-3315. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph J Hail can be reached on (703) 308-2687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3579 for regular communications and (703) 305-3588 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1184.

ajg
November 2, 2002



Joseph J. Hail, III
Supervisory Patent Examiner
Technology Center 3700